



ERS PUBLISHING

JERSY

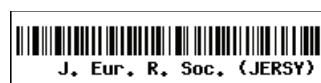
Journal of the European Royal Society
BIOLOGY – CHEMISTRY – GEOLOGY – PHYSICS

ISSN 2166-2444
print
ISSN 2166-2452
online

volume 1

issue 1

2012



WWW.THEROYALSOCIETY.ORG



Hyperresonance Unifying Theory and the resulting Law

H.R.H. Mensur Omerbashich, Crown Prince of Bosnia

Bosnian Royal Family, P.O. Box 1, Sarajevo, Bosnia

crownprince@bosnianroyalfamily.org

Abstract. **Hyperresonance Unifying Theory (HUT)** is herein conceived based on theoretical and experimental geophysics, as that absolute extension of both Multiverse and String Theories, in which all universes (the *Hyperverses*) – of non-prescribed energies and scales – mutually orbit as well as oscillate in tune. The motivation for this is to explain oddities of “attraction at a distance” and physical unit(s) attached to the Newtonian gravitational constant G . In order to make sure HUT holds absolutely, we operate over non-temporal, unitless and quantities with derived units only. A HUT's harmonic geophysical localization (here for the Earth-Moon system; the Georesonator) is indeed achieved for mechanist and quantum scales, in form of the Moon's Equation of Levitation (of Anti-gravity). HUT holds true for our Solar system the same as its localized equation holds down to the precision of terrestrial G -experiments, regardless of the scale: to 10^{-11} and 10^{-39} for mechanist and quantum scales, respectively. Due to its absolute accuracy (within NIST experimental limits), the derived equation is regarded a law. HUT can indeed be demonstrated for our entire Solar system in various albeit empirical ways. In summary, HUT shows: (i) how classical gravity can be expressed in terms of scale and the speed of light; (ii) the tuning-forks principle is universal; (iii) the body's fundamental oscillation note is not a random number as previously believed; (iv) earthquakes of about M6 and stronger arise mainly due to Earth's alignments longer than three days to two celestial objects in our Solar system, whereas M7+ earthquakes occur mostly during two simultaneous such alignments or alignments longer than a week; etc. HUT indicates: (v) quantum physics is *objectocentric*, i.e. trivial in absolute terms so it cannot be generalized beyond classical mass-bodies; (vi) geophysics is largely due to the magnification of mass resonance; etc. HUT can be extended to multiverse (10^{17}) and string scales (10^{-67}) too, providing a constraint to String Theory. HUT is the unifying theory as it demotes classical forces to states of *stringdom*. The String Theory's paradigm on vibrational rather than particlegenic reality has thus been confirmed.

Keywords: *unifying theory, multiverse theory, string theory, relativity, Newtonian gravitational constant, geophysics.*

1. Introduction

Whilst theoretical physics was a tale-telling albeit lively trade, most efforts and resources in physics of the last century were spent on verifying only one of the two rival paradigms: on particlegenic reality. The alternative paradigm – on vibrational reality – favored by String Theory, has been largely ignored. Standard Model and Higgs Theory, the pinnacles of the former paradigm, might prove certain mass-transfers could have happened but not that they *did* happen, since their paradigm clearly could be verified using earthbound data only. However, a

theory cannot be proven *in theory* but in practice instead: by using data from the same epoch as the starting physical hypothesis's, to derive equations that either prove or disprove that hypothesis. On the other hand, not nearly as much has been done in order to unlock G , the least understood classical constant and thus the most fundamental problem of science. Useless, yet exotic, theorizing took lead instead – coupled with particle-experiments that, trivially enough, all in the end find some particles. Rivaling such a fundamentally uncritical approach,

while believing that theories must be worked out around both a concept and its null-epoch's data, we herein present an approach that is based on information critical for understanding G as the constant of earthbound physics only, i.e., without pretending that G is universal in value and units.

Then one must turn to global geophysical data as the only complete information on the Earth as a classical mass-body. Global geophysics too has been unable to explain its own largest problem: the mechanism that supplies most of the energy for tectonogenesis and seismicity [1]. Mechanical tectonogenesis seems to be the culprit, as our Solar system's moons, e.g., the Titan, were found recently to feature cryovolcanism. So tectonics is driven mechanically and not by heat dissipation as believed by some. As the Earth is seismically least active in the frigid zones, this preferentiality too cannot be explained by a mix of internal processes and Earth rotation, so certain external causes that cluster about the ecliptic are called for instead.

The main theoretical problem with the Newton-Einstein setup is in its derivative concepts: of the peculiar "attraction at a distance" (over the void) and of the related "free fall"; and the main problem with G is in its meaningless unit(s) that Newton used only in order to close his theory physically as well as mathematically. In order to overcome these obscurities while avoiding absurd notions such as time, one is ideally led to the absolute blended concept of **unitless G over the vibrating void**, with temporal variations being ignored then. To detect

the vibrating void, we use the most accurate global geophysical data – taken by the superconducting gravimeter – and look for at least one relationship that describes this confusing attraction between any two classical mass-bodies (here: the Earth; the Moon) by using harmonic quantities only, such as oscillatory and orbital information of those bodies. In order to find such a relationship, we compare generalizations of the Moon-forced geos oscillator at two Earth-scales (mechanist, quantum), where physics is represented by (i.e., checked against) the value of G as estimated by NIST for each scale. No unit-bearing physical quantities can be used either, as it is unclear if those can exist as such in absolute terms, i.e., outside of the classical-mass bodies. Generalizations of such a relationship will also have to be freed from temporal variations, and include only the general part of G , i.e., its value, but not earthbound aspects of G , i.e., its unit(s). By building on the above information as it became available over the past decade, a blending view has indeed been achieved in the above way and termed **Hyperresonance Unifying Theory (HUT)**.

Based on HUT, the String Theory's paradigm has been verified at last. It is shown how classical gravity can be expressed in terms of scale and the speed of light, and that the tuning-forks principle is universal so that fundamental vibrational modes and orbital periods of heavenly bodies are tuned exactly, i.e., nothing is in so-called "free fall". The demonstration is in three steps (Sections 2-4): **georesonator**→**hyperresonator**→**hyperresonance**.

2. Georesonator

Georesonator is a concept in which the Earth is thought of as a mechanical oscillator forced mostly by the Moon's classical mass. The Earth's mass is taken totally (noise inclusive). It can be shown

that the Earth's gravity correlates with seismicity, fig.1, as well as oscillates with lunar synodic half-month period exactly, fig.2, [2]. Then the Earth is a real georesonator.

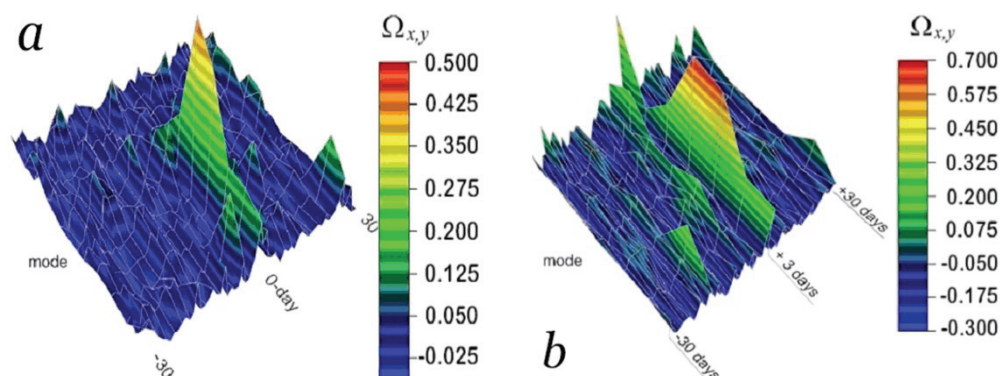


Figure 1: Cross-correlation of 1990-ies mean-diurnal mass (gravity) oscillations from Canadian superconducting gravimeter's 1Hz, 220 billion data, with global M6.3+ seismicity (in seismic energies) along low-frequency poloidal modes from a geophysical Earth-model (left panel); same, but with global M6.3+ deep seismicity along low-frequency toroidal modes from another geophysical Earth-model (right).

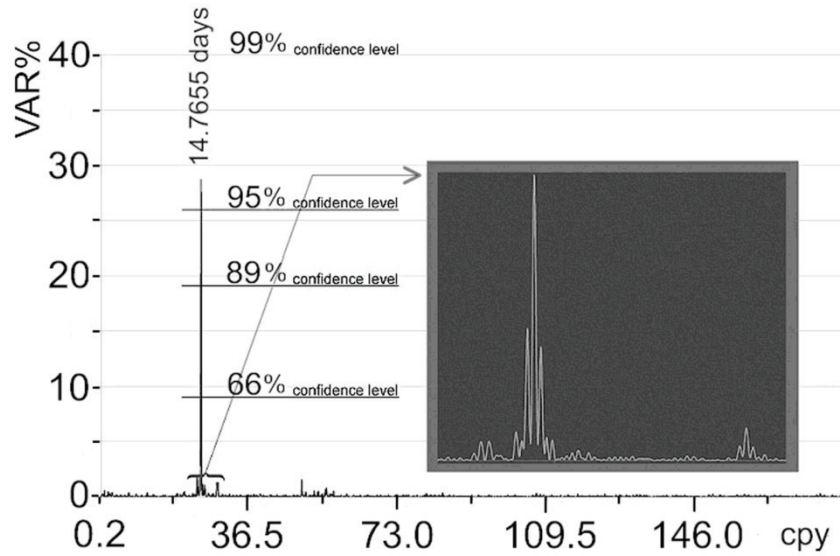


Figure 2: Spectrum of spectral magnitudes of total-Earth (all masses) mean-diurnal gravity is absolutely (to sampling resolution) periodic with lunar synodic half-month. Measured using Gauss-Vaniček spectral analysis, in variance-spectrum of variance-spectra of Canadian superconducting gravimeter's 10+ billion, 1Hz gravity data from 1990-ies. Data span 10.3 years; band 2 day – 5 yr. Solar tide removed.

Well-known equations of a viscous mechanical oscillator, here applied for the generally accepted values of Earth parameters including the mantle viscosity, give the commonly observed maximum

displacement due to strongest earthquakes, of ~10 m, as well as the 3-days phase which is also seen in cross-correlation of gravity v. deep seismicity; fig.1-b. For details on georesonator, see [2].

3. Hyperresonator

Hyperresonator is the absolute generalization of georesonator, such that georesonator applies to all quantities in all universes (of all energies; at all scales), all the time. This is achieved by operating over unitless and quantities with derived units only, while avoiding temporal considerations. On the other hand, a HUT's localization (for our space of choice: the Earth-Moon system), is achieved by comparing the relationship between Earth-Moon

forced oscillators generalized along mechanist and quantum scales, with physics (represented by G) along those same scales. We thus tacitly assumed that all gravitational considerations in the vicinity of the Earth, such as G -experiments, had failed to account for resonant magnification of gravity oscillations due to heavenly objects from our Solar system primarily. This approach proved fruitful, resulting in the Moon's **Equation of Levitation (of Anti-gravity)**: [3]

$$\begin{aligned} |G_{\text{Newton}}|_* &= \left(\frac{T_{\text{Earth}}}{T_{\text{Earth-Moon}}} \right)^1 \cdot \frac{e^2}{|c|} = 6.675010 \cdot 10^{-11} = |G_{\text{Newton}}|_{\text{NIST}}, \\ |G_{\text{Planck}}|_* &= \left(\frac{T_{\text{Earth}}}{T_{\text{Earth-Moon}}} \right)^2 \cdot \frac{e^2}{|c|^4} = 6.709310 \cdot 10^{-39} = |G_{\text{Planck}}|_{\text{NIST}} \end{aligned} \quad (1)$$

where $T_{\text{Earth-Moon}} = 14.7655$ day, fig.2 and $T_0 \text{ Earth} = 3455$ s [2], which agrees with the NIST 2006 estimates:

$$\begin{aligned} |G_{\text{Newton}}|_{\text{NIST}} &= (6.6742 \pm 0,001) \cdot 10^{-11} \\ |G_{\text{Planck}}|_{\text{NIST}} &= (6.7087 \pm 0,001) \cdot 10^{-39} \end{aligned} \quad |2006. \quad (2)$$

Eqn.(1) can be rewritten generally, for a scale s , as:

$$G = s \cdot e^2, \quad (3)$$

meaning that, what we have known so far as G , is just the scaled Euler's constant, i.e., the base of natural logarithm. Then nature itself is basically fractal in character, and therefore inherently anti-entropic. The above NIST, 2006 estimates of G do rectify the estimate of T_{Earth} , Eqn.(1), up from a coarse 3455 s (as measured by superconducting gravimeter – the world's most accurate instrument that is used also for estimating G), to 3454.8 ± 0.1 s. While the NIST, 2006 estimates Eqn.(2) do close Eqn.(1) an order of magnitude better than the preceding NIST estimates used to, the NIST, 2010 updated estimates score against the NIST, 2006 estimates even better, albeit just under a half an order of magnitude so. Since the localization, Eqn.(1), of HUT, Eqn.(3), does successfully relate orbital periods with major eigenperiods of certain heavenly bodies in our Solar system, Eqn.(3) is thereby understood as the **Kepler's 4th law**. That Eqn.(3) is indeed a law can be seen from the fact that it holds true at least for our entire Solar system, i.e., to the precision of best terrestrial G -experiments, regardless the scale: to 10^{-11} and 10^{-39} for mechanist and quantum scales, respectively. Such a relationship requires a precisely tuned, vibrating medium, in order for orbital periods and

eigenperiods of heavenly bodies to “communicate” with each other down to the absolute precision and in a closed form, such as the case with Eqn.(1). Hence the law, Eqn.(3), both completes and overturns the Newton's “action at a distance” unlikely concept, as well as its Einstein-Riemann mathematical enhancement for dynamic setups. At the same time, String Theory readily offers its own realm (classical aether; here: *stringdom*) as the natural setup for Hyperresonator as well. We note here that the Newton-Einstein concept had been fundamentally beset by the assumption that G was both a universal constant and a physical quantity with its own physical unit(s).

The law possesses many elemental properties, showing: (i) how classical gravity can be expressed in terms of scale and the speed of light; (ii) that the well known tuning-forks principle is universal (or, rather: *hyperversal*); (iii) that the body's fundamental oscillation note is not a random number as previously believed; and so on. Finally, manipulations in the law's power indices, reflecting the law's range of scales in both extents, enable HUT to be extended to both multiverse (10^{17}) and string scales (10^{-67}), thereby constraining String Theory:

$$\begin{aligned} |G_{\text{multiverse}}|^* &= \left(\frac{T_{\text{Earth}}}{T_{\text{Earth-Moon}}} \right)^0 \cdot \frac{e^2}{|c|^{-2}} = 6.64095 \cdot 10^{17} \\ |G_{\text{string}}|^* &= \left(\frac{T_{\text{Earth}}}{T_{\text{Earth-Moon}}} \right)^3 \cdot \frac{e^2}{|c|^7} = 6.74377 \cdot 10^{-67} \end{aligned} \quad (4)$$

For details on the hyperresonator, see [3].

4. Hyperresonance

Hyperresonance is the hyperresonator's working state, i.e., it is the absolute vibration of stringdom. Then hyperresonance can be verified empirically only. By comparing astronomical with seismic data (primarily from the decade of 2000's, independent of the data used for considerations in Section 2), one easily obtains various empirical proofs of HUT for our Solar system, figs. 3-5. So hyperresonance as a phenomenon can indeed be seen at work, in multiple ways: as a Sun-centered hyperresonator; fig.3, as a preferential rotation in strain-vortices of classical viscous mass, fig.4; as the strengthening-peaking-weakening patterns in Earth's M6+ seismicity (an equivalent of 2/3+ of kinetic energy

emitted by all earthquakes) during astronomical alignments that lasted for more than 3 days – the mantle-sensitive limiting phase of georesonator, fig.1-b) and fig.5; and so on. Moreover, the peak magnitudes in such patterns, as seen from the alignments that lasted for weeks-to-months, also formed patterns of the same type. This renders the hyperresonance setting, i.e., the *Hyperverse* (the set of all the universes, where each tidally affects at least another) fractal in character and thereby anti-entropic, which corroborates the consequence of the law, Eqn.(3). The property of anti-entropy forbids singular events such as the alleged “Big Bang”. For details on hyperresonance, see [4].

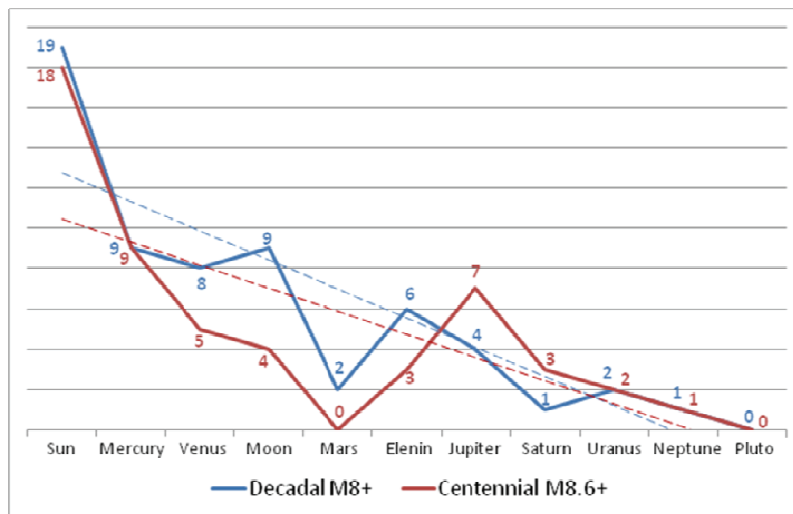


Figure 3. An empirical proof of HUT via regularity of change in the number of times a Solar system's body participated in Earth's long alignments during which very strong (M8+) earthquakes of the decade of 2000's (blue), and strongest (M8.6+) earthquakes of the past 108 years (red), occurred. For added redundancy, the set of planets expanded with the comet Elenin, as it is currently the only other heavenly body in our Solar system "plane" besides planets. The Elenin placed normally in the middle in both series. Remarkably, Mars plays no role in strongest seismicity, in addition to the planetoid Pluto (due to Pluto's large orbital inclination), adding an argument pro Pluto's demotion as a planet. Our Moon occasionally impacts very strong seismicity, same as other heavenly bodies in the Solar system do. If hyperresonance were not real, the values would be random, their change non-gradual, and linear trends (dashed lines) horizontal.

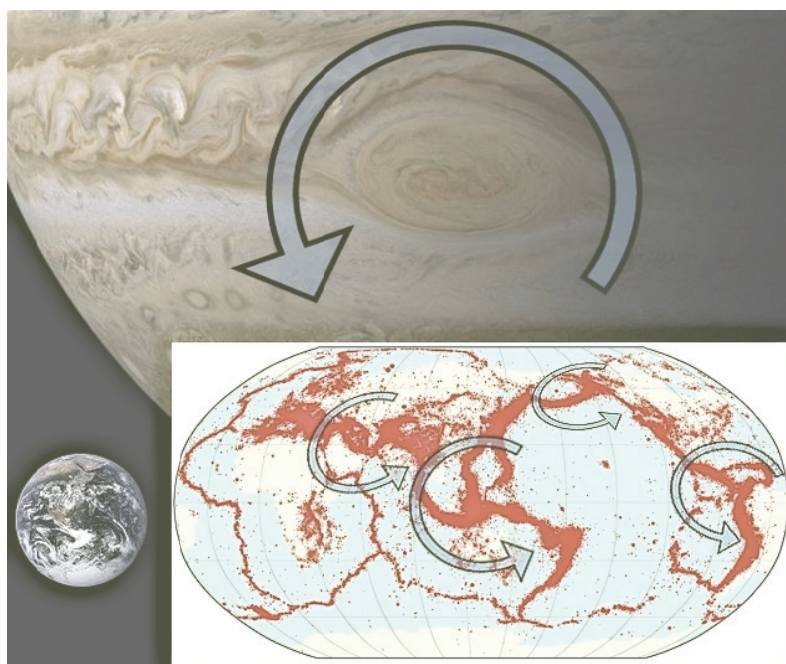


Figure 4. An empirical proof of HUT via comparison of the Jovian Great Red Spot and the Earth's most seismic zones. This phenomenon maintains the same (counter-clockwise) rotational preference over long geological times, regardless of the planet and hemisphere, unlike the domestically caused mass-vortex phenomena such as cyclones or anti-cyclones whose directionality is hemisphere-dependent. Since not necessarily of domestic origin, and since it can be seen on both planets regardless of classical-mass density, the phenomenon is caused externally. The only viable candidate for this is the magnified mass-resonance due to classical-mass bodies of our Solar system. Images of the Jupiter v. the Earth to scale. Map modified from: World Seismicity Map 1964-2008, International Seismological Centre; the Robinson compromising map projection, arguably the most faithful representation of the Earth surface everywhere except for the frigid zones. The above comparison demonstrates hyperresonance since: (i) all of the Earth's and Jupiter's largest strain-vortices (as projected onto the surface) visibly obey the georesonator/hyperresonator concept, and (ii) rotational direction in strain-vortices is preferential regardless of the hemisphere/density. Obviously, hyperresonance shapes continents and topography.

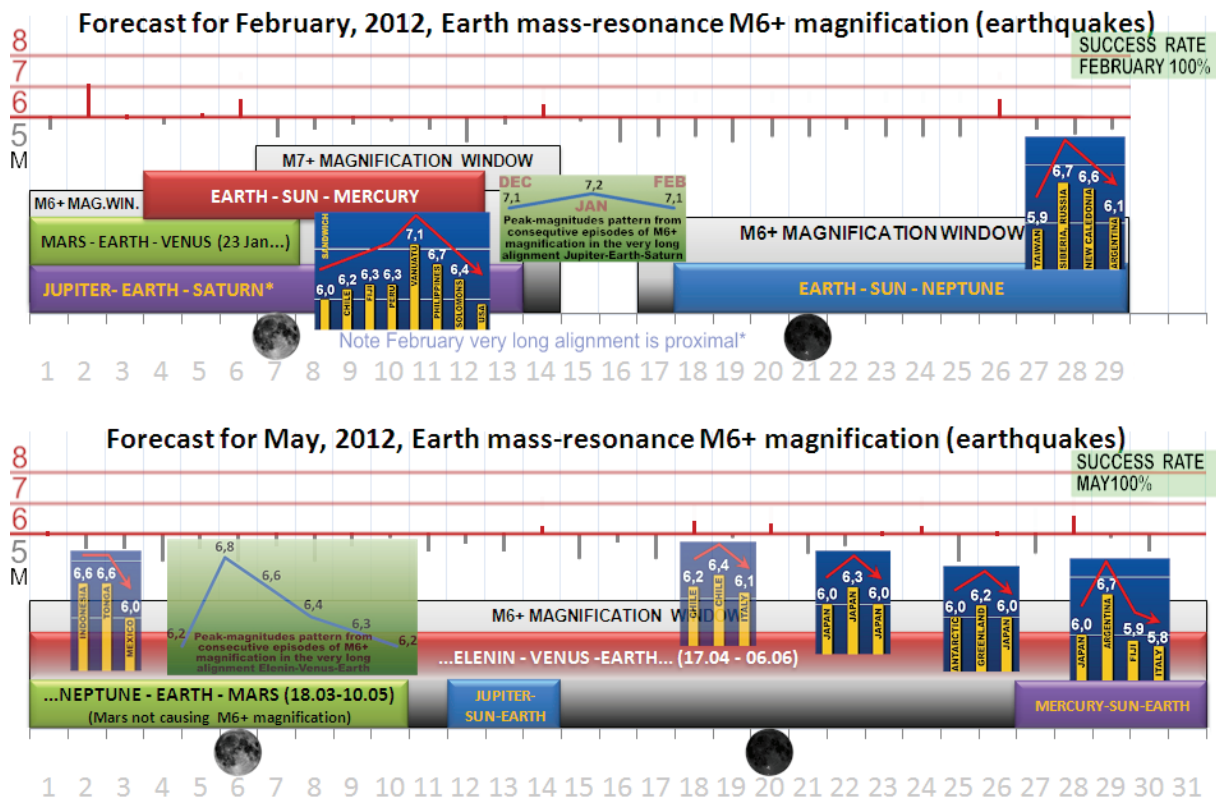


Figure 5. An empirical proof of HUT via uncritically selected sample of the increasing-peaking-weakening patterns (blue callouts) which arise always in Earth's M6+ (an equivalent of 2/3+ of kinetic energy from earthquakes) seismicity during Earth's (-5°, +5°) alignments longer than 3 days to two Solar system's bodies. The same patterns occur in Earth's M7+ seismicity during two simultaneous such alignments, or such alignments that last for longer than a week. In those alignments that go on for weeks to months, the patterns' own peak-magnitudes themselves form patterns of the same type (green callouts), showing that the Hyperverses is fractal in character and thereby anti-entropic. For complete 6-months demonstration and other details, see [4]; as well as www.seismo.info.

Based on the above, our Solar system is then a real hyperresonator.

5. Discussion and conclusions

The fact that we could arrive at the experimental value of G at various scales and with absolute precision just by operating over quantities without real units means that no physical units are real to begin with. Their very appearance is always a local phenomenon then. Physical units refer to some pre-selected space of interest, here the Earth-Moon system, the Earth's surface primarily. So we demonstrated absolutely (independently of the concepts of time and units; at various scales) that the so-called Newtonian gravitational constant, G , is actually a parameter whose value (but not the units) is independent of space selection or any imaginary mathematical constructs such as time, space-time, etc.

Imaginary "gravitational pull" from the classical view is just a vibrational push along the stringdom. Mathematical singularities (errors, really) from Einstein's General Relativity Theory, referred to by some as real "black holes" are multilateralities – the points of locally highest oscillatory excitement of stringdom. In case of galaxies, the excitement originates mostly from within the galaxy, giving the appearance of a "black hole" around galactic centres. The "holes" however, are not phenomena but purely geometric, Keplerian foci. The resonant magnification amounts then, all through the intergalactic Space – to what is oddly regarded by some as "dark matter/energy". Galaxies themselves are just stringdom vortices – "pinwheel toys" – which

by their preferential rotation indicate that our known universe orbits about as well as oscillates in tune with outer universe(s), thus supporting our starting physical hypothesis – that HUT is indeed a correct generalization of both Multiverse Theory and String Theory. The here demonstrated anti-entropy property of HUT renders alternative grand unifying theories forbidden by virtue of scale non-preferentiality. Brane Theory for instance, requires parallel universes to belong to rather same scales.

It is inadequate to express classical mass of an object that is positioned outside of the Earth in units of weight such as kilogram; “weightlessness” being the most obvious hint at such inadequacy. Since the concept of classical mass cannot be extended universally and uniquely, no alternative description of mass of an object positioned outside the Earth can be real either. In other words, such a description, as well as its units and constants, are always only local (here: earthbound), i.e., they are *objectocentric* and therefore highly unreliable in terms of prediction for Space. Objectocentricity is what makes Newton’s Theory and its detailed form the so-called Standard Model such a success story in the vicinity of heavenly objects (based on Newton’s mechanism of “central gravity fields”), and at the same time such a failure for everywhere else in the universe(s). Then the solution of a famous multi-body problem of Newton Theory is simple in HUT, where it should be searched in Dermott’s rule – an empirical formula for orbital period of satellites that orbit planets in our Solar system. Basically, thanks to HUT, near ratios of mean motion now have physical meaning.

As we herein provided the first mathematical-physical constraint to String Theory, the classical gravity (tidal) force between the extreme realms of the Hyperverse and strings, where strings are enmeshed into orbiting-oscillating multiverses, is neither the Newtonian “attraction at a distance”

apparent at inertial mechanist scale, nor the Riemannian “distortion of space-time” apparent at dynamic mechanist scales. Rather, we speak of an incessant ubiquitous influx of forward-propagating string vibration on to the point of interest. This spreading leaves background energy signatures which can forge the “Big Bang” type of events. Finally, HUT also indicates that “strange quantum phenomena”, like quantum entanglement, wave-particle duality, etc., are all trivial as quantum physics too is objectocentric, i.e., appears only in the vicinity of classical mass-bodies which are all now non-independent, mathematically completely describable realms of georesonators.

Geophysics itself seems largely due to classical-mass resonance magnification. Alfred Wegener’s main proposal – that tectonics arises externally – is basically correct as Solar system’s hyperresonance shapes continents and topography, fig.5. It turns out that, as Einstein once remarked, geophysics was the “missing link” of theoretical physics. As classical gravity now can be expressed in terms of scale and the speed of light, it is clear that true gravity (i.e., as a phenomenon) is not a classical force. Instead, true gravity is the totality of all magnified oscillations throughout stringdom. True gravity thus consists of two main components: the objectocentric (apparent) and the hyperresonant (hidden) component that was, out of ignorance, misnamed the “dark energy/matter”.

The fork-tuning principle is universal. Systemic uniformity (rotation- and size-wise) of stringdom’s strain-vortices confirms that hyperresonance is the observable working state of hyperresonator as the system of all universes – mutually orbiting and oscillating at all scales and energies, all the time. HUT is the unifying theory as it capably demotes classical forces to states of stringdom. At last, the String Theory’s paradigm on vibrational and not particlegenic reality has been verified.

Acknowledgment

We thank Dr. Petr Vaníček.

References

- [1] Stevenson, D.J. (2008) A planetary perspective on the deep Earth. *Nature* 451(7176):261-265.
- [2] Omerbashich, M. (2007) Magnification of mantle resonance as a cause of tectonics. *Geodinamica Acta* 20(6):369-383.
- [3] Omerbashich, M. (2010) Scale invariability. Sent to *Annalen der Physik*. arxiv.org/abs/0801.0876.
- [4] Omerbashich, M. (2012) Astronomical alignments as the cause of ~M6+ seismicity. arxiv.org/abs/1104.2036